

TOP FOUR TRAITS OF SYNTHETIC LUBRICANTS IN INDUSTRIAL APPLICATIONS

ABSTRACT

Synthetic lubricants (Synthetic Oil & Grease) have been used in industrial applications for more than two decades. Synthetic lubricants effectively increase efficiency and operating production, making them incredible resources for great assets. The two most significant benefits of synthetic oils are; their capacity to beat mineral oils at high working temperatures (above 85 degrees Celsius) and their high effectiveness at low working temperatures (below - 18 degrees Celsius).



The selection of synthetic lubricant is dependent upon different factors such as type of equipment, operating conditions and the temperature at which a machine is running etc.

Let us have a look at the advantages of synthetic lubricants related to their unique features and characteristics.

1. HIGH VISCOSITY INDEX :

The lubricants that are produced by the chemical modification of oil components and not by refining crude oil are nothing but synthetic lubricants. The highly controlled chemical reactions used in this process are run under a highly regulated temperature, pressure and component level. These conditions are the controlled conditions that are necessary in order to create uniform particle size and targeted performance properties which gives these lubricants unique features and makes them a real troubleshooter.

One of these features of this process is the high viscosity index of fluid.

A viscosity index is the measure of a fluid's change in viscosity relative to temperature change. It is one of the most important and crucial properties of lubricant. A higher viscosity index implies that oil stays stable in spite of fluctuations in temperature, which happen regularly during a machine's day-to-day activity. It means that the lubricant will oppose getting more thinner at high temperatures thus improving the machine's oil program and offering better security to the heading and other many-sided machine parts.

2. BETTER OXIDATION RESISTANCE:

The most significant benefit that a synthetic lubricant can offer is better resistance to oxidation. Synthetic Oil & Grease have higher oxidation stability than mineral oils which suggests that they can offer a more drawn-out life which leads to less lubrication starvation and longer drain intervals with the less frequent oil change. Because of this property, synthetic oils are best used in machines that require longer drain intervals, little maintenance and reduced downtime.

Numerous lubricant manufacturers guarantee that synthetic lubricants last 3-4 times longer than their mineral oil equivalents. Longer life likewise improves operating efficiency and potential cost savings for your plant.

3. INTERNAL FLUID FRICTION OR TRACTION COEFFICIENT

Traction coefficient or internal fluid friction (resistance) is also another important feature of synthetic lubricant that improves machines' efficiency. The traction coefficient is the shearing force expected to move a load, partitioned by the load. The coefficient number addresses the simplicity with which lubricant film is sheared or affected. This indicates that if the force needed to move a load is less then the energy used will be also less. Hence by using low-traction synthetic lubricant will essentially reduce power utilization which will prompt lower energy bills for the plant.

4.HIGH FILM STRENGTH :



A lubricant's Film strength is one of the most important as well as critical lubricant properties for protecting a machine's internal components from wear. Most of the synthetic lubricants have high film strength, which permits them to be used in very low temperatures. They are wax-free and have colder pour points than mineral oils, empowering them to lubricate machine components and start the engine much quicker in colder conditions.

FINAL WORD:

Lately, synthetic oil & grease have been gaining popularity in industrial applications.

In spite of the fact that the synthetic lubricant market is far more expensive than the conventional or mineral oil market, the profit from the investment is going to be huge due to their novel properties and better execution under a wide scope of operating conditions. However, their benefits rely upon the working conditions and the type of synthetics.